

Remarks

In this discussion set forth below, Applicant does not acquiesce to any rejection or averment in this Office Action unless Applicant expressly indicates otherwise. As will be discussed further below, the rejections are erroneously based upon the Examiner's mischaracterization of the claimed tilling structures.

In the instant Office Action dated May 27, 2008, claims 1-22 stand rejected under 35 U.S.C. § 103(a) over Hiromoto (JP2001230375A).

Applicant respectfully traverses the § 103(a) rejection of claims 1-22 because the Examiner improperly fails to address aspects of the claimed invention directed to the claimed plurality of tilling structures. Specifically, the Examiner erroneously asserts that aspects relating to the claimed tilling structures are product by process limitations.

Applicant submits that this position is disingenuous because claim 1 does include any steps or process limitations. Moreover, according to M.P.E.P. § 2173.05(p), a product by process claim is a product claim that defines the claimed product in terms of the process by which it is. In this instance the claimed aspects relating to the tilling structures are directed to the tilling structures themselves, not the process by which the tilling structures are made. For example, claim 1 includes aspects directed to how the tilling structures are arranged and claim 2 induces further related aspects. Thus, Applicant submits that the Examiner is required to address these aspects relating to the arrangement of the claimed tilling structures. Further, Applicant notes that claim 22 is a method claim (*i.e.*, a process), as such, any assertion regarding product by process limitations is inapplicable to claim 22. Accordingly, the § 103(b) rejection of claim 1-22 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claims 1-22 because the cited portions of the Hiromoto reference do not correspond to the claimed invention that includes tilling structures, which are inherently arranged to improve manufacturability of the semiconductor device. The Examiner misconstrues the cited portions of Hiromoto as corresponding to the claimed tilling structures. According to M.P.E.P. § 2111.01, the words of the claim cannot be interpreted in a manner that is inconsistent with the Applicant's specification. In this instance Applicant submits that the Examiner's contention that Hiromoto's ground shield corresponds to the claimed tilling structures is

inconsistent with the meaning of a tilling structure as defined by Applicant's specification. For example, the cited portions of Hiromoto teach a ground shield (*see e.g.*, Figure 2 and Paragraphs 0063-0065 of Applicant's Specification), not tilling structures; Hiromoto further teaches that polysilicon 5b and metal silicide 8b form the 1st shielding pattern, which together with the 2nd shielding pattern (*i.e.*, metal silicide 8d) form a ground shield layer. *See, e.g.*, Figure 3a; paragraphs 0012, 0014 and 0036. Applicant submits that the skilled artisan would recognize that Hiromoto's ground shield does not correspond to the claimed tilling structures. *See, e.g.*, "A CMOS 10 GHz Voltage Controlled LC- Oscillator with integrated high-Q inductor", Wouter De Cock and Michiel Steyaert, Conference ESSCIRC 2001, proceedings p. 496-499; and Paragraphs 0004-0007 of Applicant's Specification. More specifically, Applicant's specification states that tilling structures (as is known in the art) are used to increase or decrease the pattern density in empty or large metal layers respectively in order to improve the manufacturability of the semiconductor device. *See, also*, U.S. Patent No. 7,152,215, Col. 1:54-59. In contrast, Hiromoto's ground shield layer is used to prevent coupling between an inductor and a substrate. *See, e.g.*, Figure 3a of Hiromoto; and Figure 2 and Paragraphs 0063-0065 of Applicant's Specification. As such, Hiromoto's ground shield layer is not taught to increase or decrease the pattern density for manufacturability. Accordingly, Applicant submits that the Examiner's assertion that Hiromoto's ground shield corresponds to Applicant's tilling structures is inconsistent with the meaning of a tilling structure as defined by Applicant's specification, which differentiates a ground shield from tilling structures.

In view of the above, the cited portions of Hiromoto do not correspond to the claimed invention. Accordingly, the § 103(a) rejection of claims 1-22 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claim 3 because the Examiner again fails to address aspects of the claimed invention based on the erroneous assertion that such aspects are product by process limitations. Applicant submits that the aspects of claim 3 asserted by the Examiner to be product by process limitations are directed to how the arrangement of the tilling structures is determined, not the process by which the tilling structures are made. As such, Applicant submits that such aspects are not product

by process limitations. Accordingly, the § 103(a) rejection of claim 3 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claim 4 because the cited portions of Hiromoto do not correspond to aspects of the claimed invention directed to the geometrical pattern of tilling structures at two different layers being different in shape and/or orientation. The Examiner improperly asserts that Hiromoto's polysilicon 5b and metallic silicate 8b are different in shape and/or orientation. For example, the cited portions of Hiromoto teach that polysilicon 5b and metallic silicate 8b each have the same shape and orientation (*i.e.*, metallic silicate 8b is formed on top of polysilicon 5b), with polysilicon 5b and metallic silicate 8b forming the 1st shielding pattern. *See, e.g.*, Figures 1b and 3; paragraph 0012. In response to Applicant's argument, the Examiner improperly relies upon Hiromoto's Figure 1 to assert that polysilicon 5b and metallic silicate 8b are of different shape and orientation. Applicant submits that those parts of Hiromoto's Figure 1a that are labeled as 8b are actually the second shielding pattern 8d and thus are mislabeled in Figure 1a. Specifically, Hiromoto discusses in paragraph 0013 that metal silicide 8d contains connection field 8d-2 that extends into the slitting 15 (formed in polish recon 5b) and that connects with metal silicide 8d-1. Hiromoto's Figure 1b shows that metal silicide 8b is located on top of polish recon 5b, and Hiromoto's Figure 3a shows that metal silicide 8d extends into the slitting 15 in metal silicide 8b. Thus, Hiromoto teaches that polysilicon 5b and metallic silicate 8b each have the same shape and orientation. Hiromoto's Figure 1a mislabels regions 8d as 8b, as such, Figure 1 in view of the remainder of the Hiromoto reference does not support the Examiner's assertion that polysilicon 5b and metallic silicate 8b are different in shape and/or orientation. Accordingly, the § 103(a) rejection of claim 4 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claim 8 because the cited portions of the Hiromoto reference do not correspond to aspects of the claimed invention directed to the tilling structures being a plurality of substantially triangular elements. Hiromoto does not teach that polysilicon 5b and metallic silicate 8b are formed of substantially triangular elements. *See, e.g.*, Figures 1a, 1b and 3. In response to Applicant's argument, the Examiner cites to the square corners of polysilicon 5b and the

Examiner asserts that each of these squares is formed of two triangular elements if one were to draw a line bisecting the square. Applicant submits that the Examiner’s interpretation essentially gives no meaning to the tilling structures being a plurality of substantially triangular elements (*i.e.*, the Examiner is improperly reading these aspects out of the claim by asserting that correspondence can be shown by citation to a square). *See, e.g.*, M.P.E.P. § 2111.01. Applicant submits that the cited portions of Hiromoto are formed of squares instead of a plurality of substantially triangular elements as claimed. Accordingly, the § 103(a) rejection of claim 8 is improper and Applicant requests that it be withdrawn.

Applicant further traverses the § 103(a) rejection of claims 15-20 because the cited portions of Hiromoto do not correspond to aspects of the claimed invention directed to a further passive element. The cited portions of the Hiromoto reference do not mention a further passive element, let alone that the further passive element is a capacitor. *See, e.g.*, Figure 3, paragraph 0036, and the Abstract. For example, these portions of Hiromoto discuss the parasitic capacitance between the inductor and the 1st and 2nd shield patterns, not that the device includes a separate passive element (*e.g.*, a capacitor). Applicant submits that the skilled artisan would recognize that a parasitic capacitance is not equivalent to a separate capacitive element as in the claimed invention. In response to Applicant’s argument, the Examiner simply asserts that it would be obvious to the skilled artisan “to produce a passive element, *i.e.*, capacitor, (if needed in the circuit) since the structure of Hiromoto discloses capacitive properties being present in its structure.” Thus, the Examiner appears to be taking Official Notice that it would be obvious to combine a capacitor with Hiromoto; however, “It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known.” *See, e.g.*, M.P.E.P. § 2144.03 (“While ‘official notice’ may be relied on, these circumstances should be rare when an application is under final rejection”). Applicant submits that the various aspects of claims 15-20 are not capable of instant and unquestionable demonstration as being well-known, since Hiromoto does not even disclose a separate capacitive element.

In addition, the Examiner improperly concludes that the skilled artisan would combine a capacitor with Hiromoto without providing any reason why the skilled artisan would combine these elements. *See, e.g.*, M.P.E.P. § 2141 (“rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.”), *see also KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007) (“A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art.”) Moreover, the purpose of the Hiromoto reference is to reduce the above discussed parasitic capacitance. *See, e.g.*, paragraph 0036. Thus, Applicant submits that Hiromoto appears to teach away from adding a separate capacitive element. *See, e.g.*, M.P.E.P. § 2141.02.

In view of the above, the § 103(a) rejection of claims 15-20 is improper and Applicant requests that it be withdrawn. Should any rejection based on Hiromoto be maintained, Applicant requests that the Examiner provide documentary support for the assertion that it would be obvious to combine a capacitor with Hiromoto and that the Examiner provide motivation for why the skilled artisan would perform such a combination.

In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

Please direct all correspondence to:

Corporate Patent Counsel
NXP Intellectual Property & Standards
1109 McKay Drive; Mail Stop SJ41
San Jose, CA 95131

CUSTOMER NO. 65913

By:

Name: Robert J. Crawford
Reg. No.: 32,122
651-686-6633 x2300
(NXPS.267PA)